Claims

We claim:

Claim 1-An apparatus for curing an adhesive with high-intensity radiation comprising:

a housing having an insulating cylindrical section and an insulating disc-shaped section defining an interior;

an LED array in said interior of said housing to emit high-intensity radiation;

a plurality of batteries in said interior of said housing adjacent said LED array to supply power to said LED array;

an insulating spacer layer interposed between said LED array and said plurality of batteries to prevent shorting of said batteries;

a switch relay in said interior of said housing connected to said LED array and said plurality of batteries;

a disc-shaped cover transparent to said high-intensity radiation and being disposed adjacent said LED array, said cover being connected to said cylindrical-shaped section to seal said interior from ambient; and

a switching mechanism mounted on the outside of said housing, said switching mechanism being displaced on said housing to close said switch relay and connect said power to said LED array to emit said high-intensity radiation through said cover.

Claim 2-An apparatus according to claim 1 further comprising:
a fuse connected between said switch relay and said LED array to prevent overload current; and
a safety pin to engage said housing and said switching mechanism together to prevent displacement of said switching mechanism.

Claim 3-An apparatus according to claim 2 further comprising:
a biasing spring connected to said housing and said switching mechanism to hold said switching mechanism in the off position.

Claim 4-An apparatus according to claim 3 further comprising:
a compliant shroud around said disc-shaped cover to prevent the transmission of said high-intensity radiation to the ambient.

Claim 5-An apparatus according to claim 4 wherein said LED array emits radiation at 470nm.

Claim 6-An apparatus according to claim 5 further comprising:
an abrasive layer on said housing; and
a blade section on said housing, said abrasive layer and said blade section being displaced to prepare a surface.

Claim 7-An apparatus according to claim 6 wherein said switching mechanism has a magnet sized to slideably fit within a groove on said cylindrical-shaped section of said housing to be engaged by a gloved operator to permit its longitudinal displacement said groove.

Claim 8-An apparatus according to claim 7 wherein said housing is about four inches in diameter and two inches high to permit user-friendly tactile operation.

Claim 9-An apparatus according to claim 8 wherein said cover has a coating to provide a one-way capability for emitted radiation.

Claim 10-An apparatus according to claim 7 wherein said cover has a coating to provide for filtering.

Claim 11-An apparatus for curing an adhesive with high-intensity radiation comprising:

A housing having an insulating cylindrical section and an insulating disc-shaped section defining an interior;

Means in said interior of said housing for emitting high-intensity radiation;

Means for supplying power to said high-intensity radiation emitting means;

Means interposed between said LED array and said plurality of batteries for insulating and spacing to prevent shorting of said batteries;